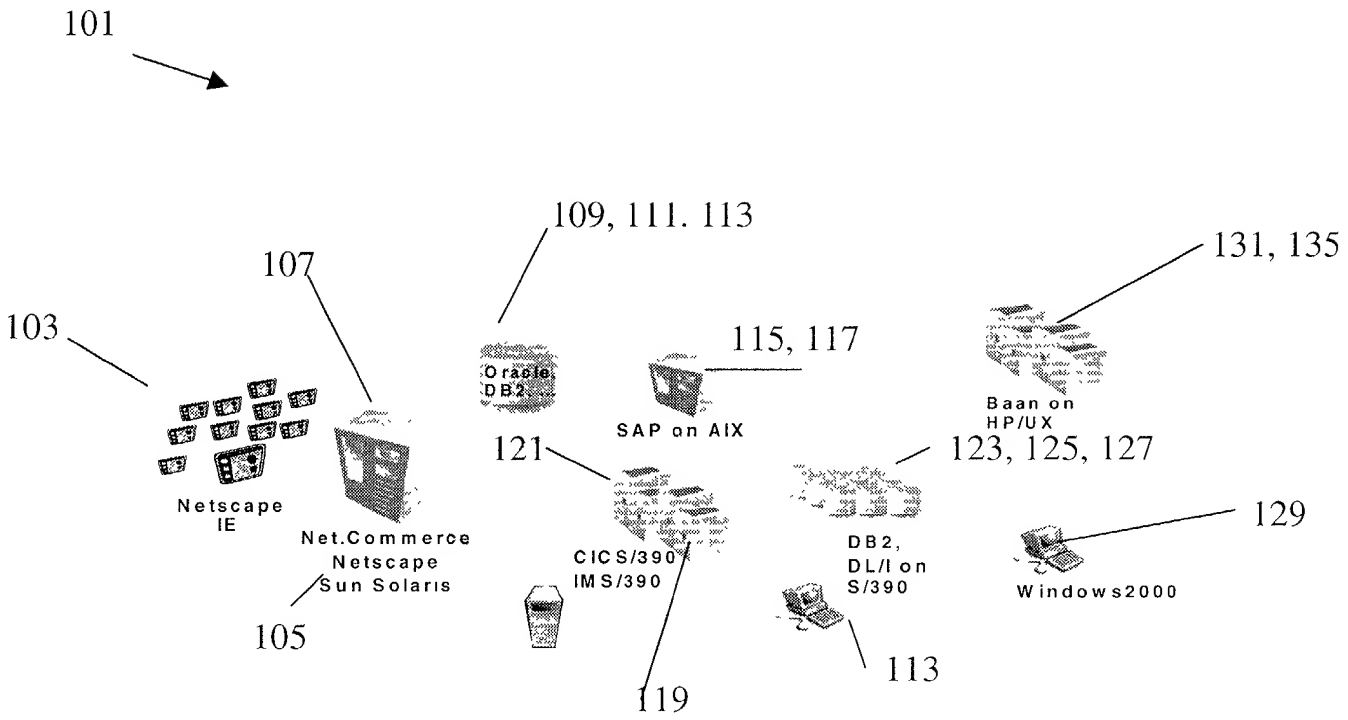
101
109, 111. 113
107
131, 135
103
115, 117
Oracle,
DB2
Baan on
HP/UX
SAP on AIX
121
123, 125, 127
129
Netscape
IE
Net.Commerce
Netscape
Sun Solaris
CICS/390
IMS/390
DB2,
DL/I on
S/390
Windows2000
105
113
119

Figure1

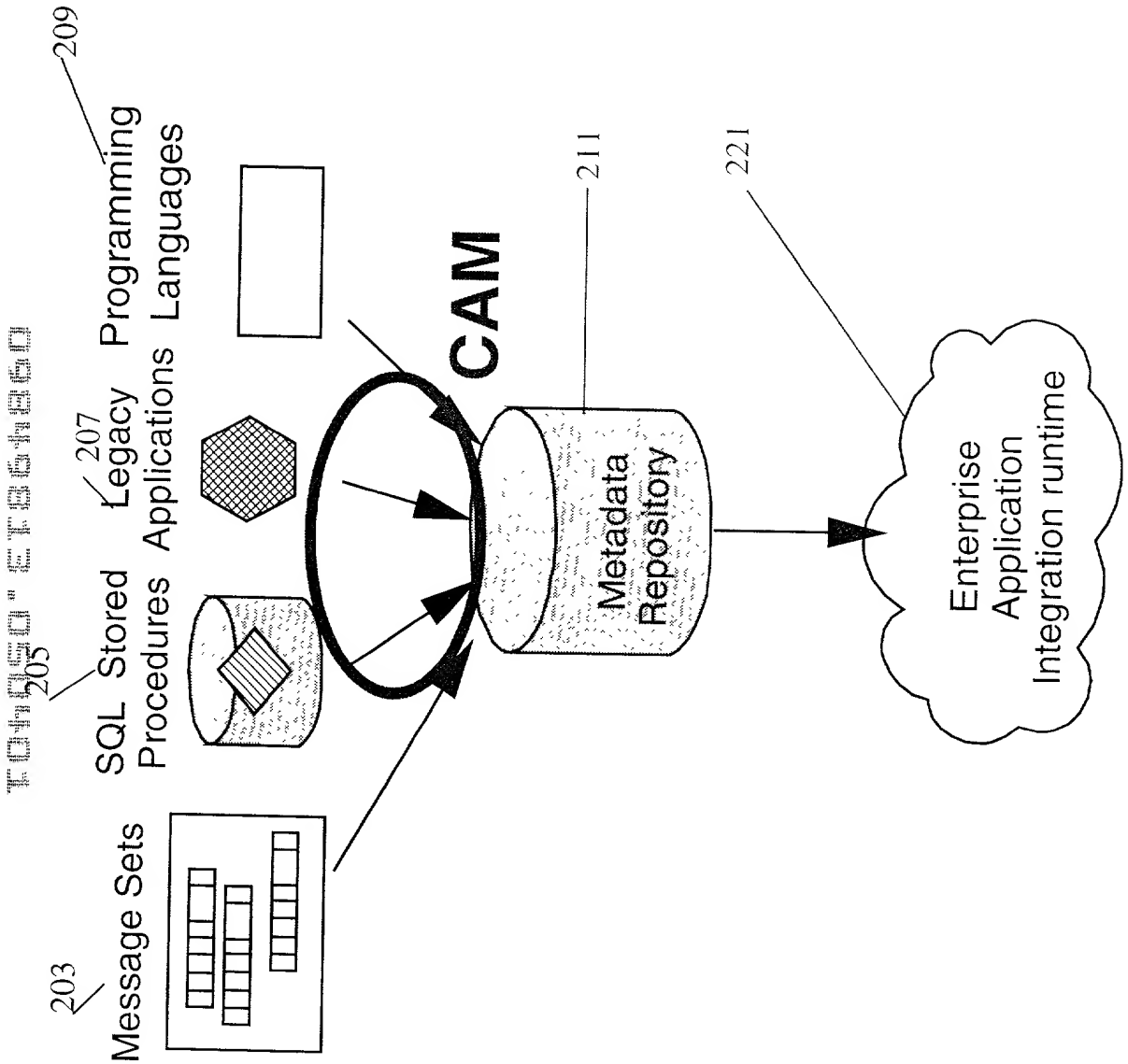
203
Message Sets
205
SQL Stored Procedures
207
Legacy Applications
209
Programming Languages
CAM
211
Metadata Repository
221
Enterprise Application Integration runtime

Figure 2

TOhOSO" ET86h860

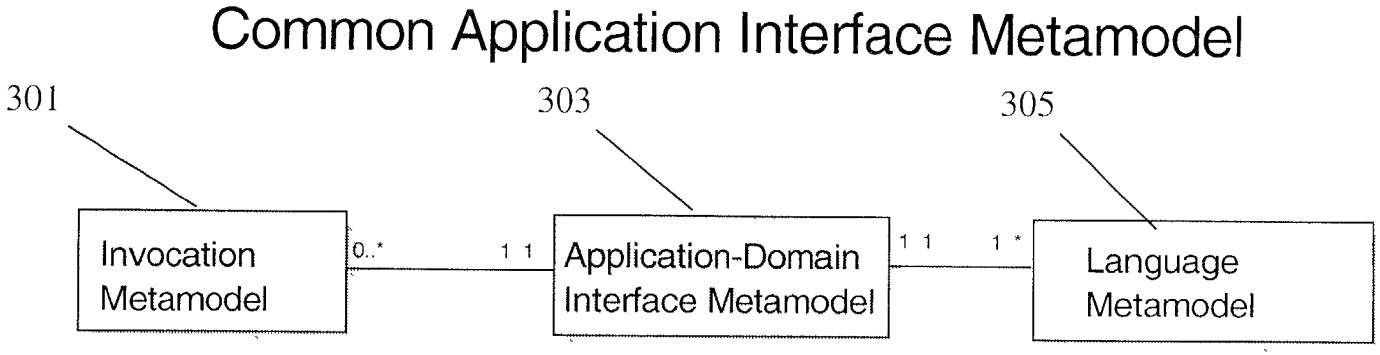

Figure 3

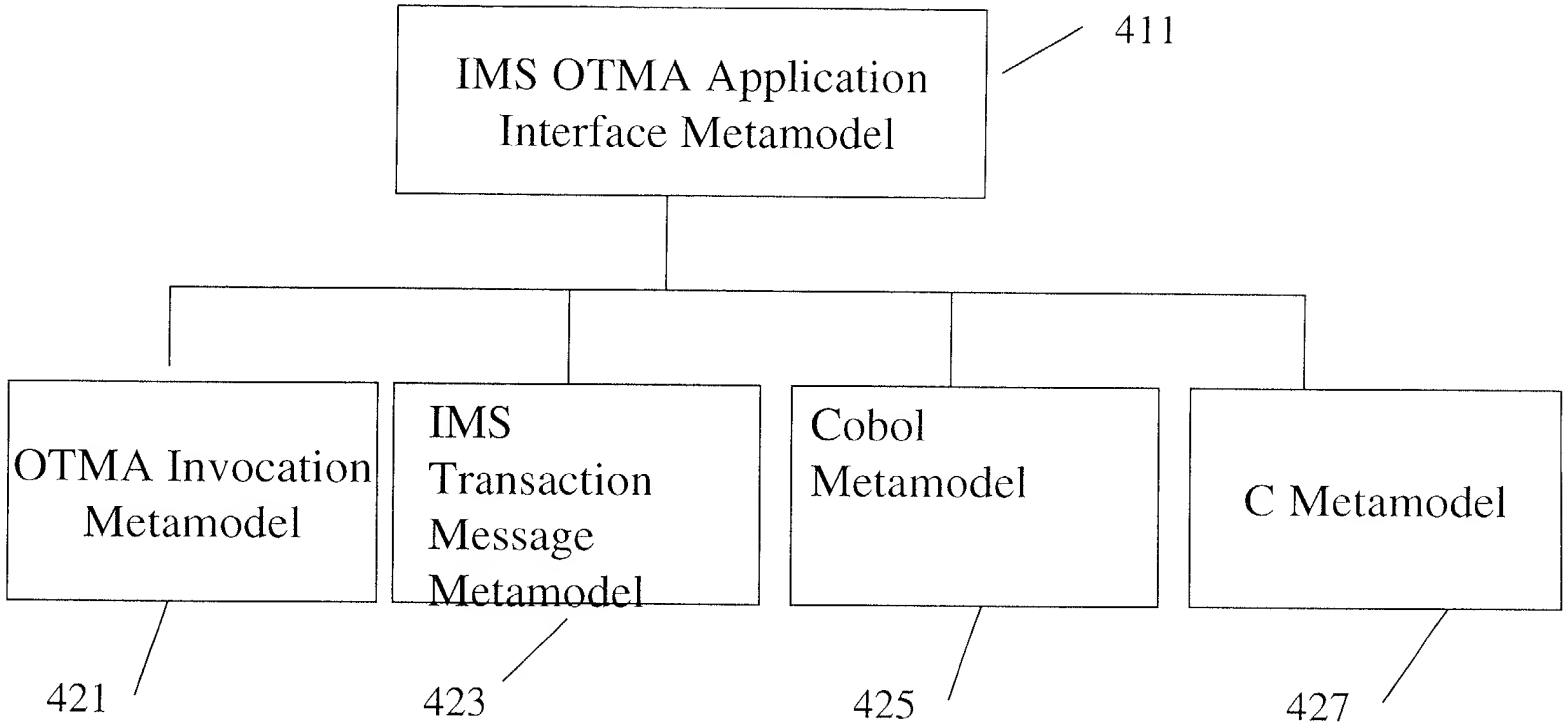
IMS OTMA Application Interface Metamodel
411
OTMA Invocation Metamodel
IMS Transaction Message Metamodel
Cobol Metamodel
C Metamodel
421
423
425
427

Figure 4

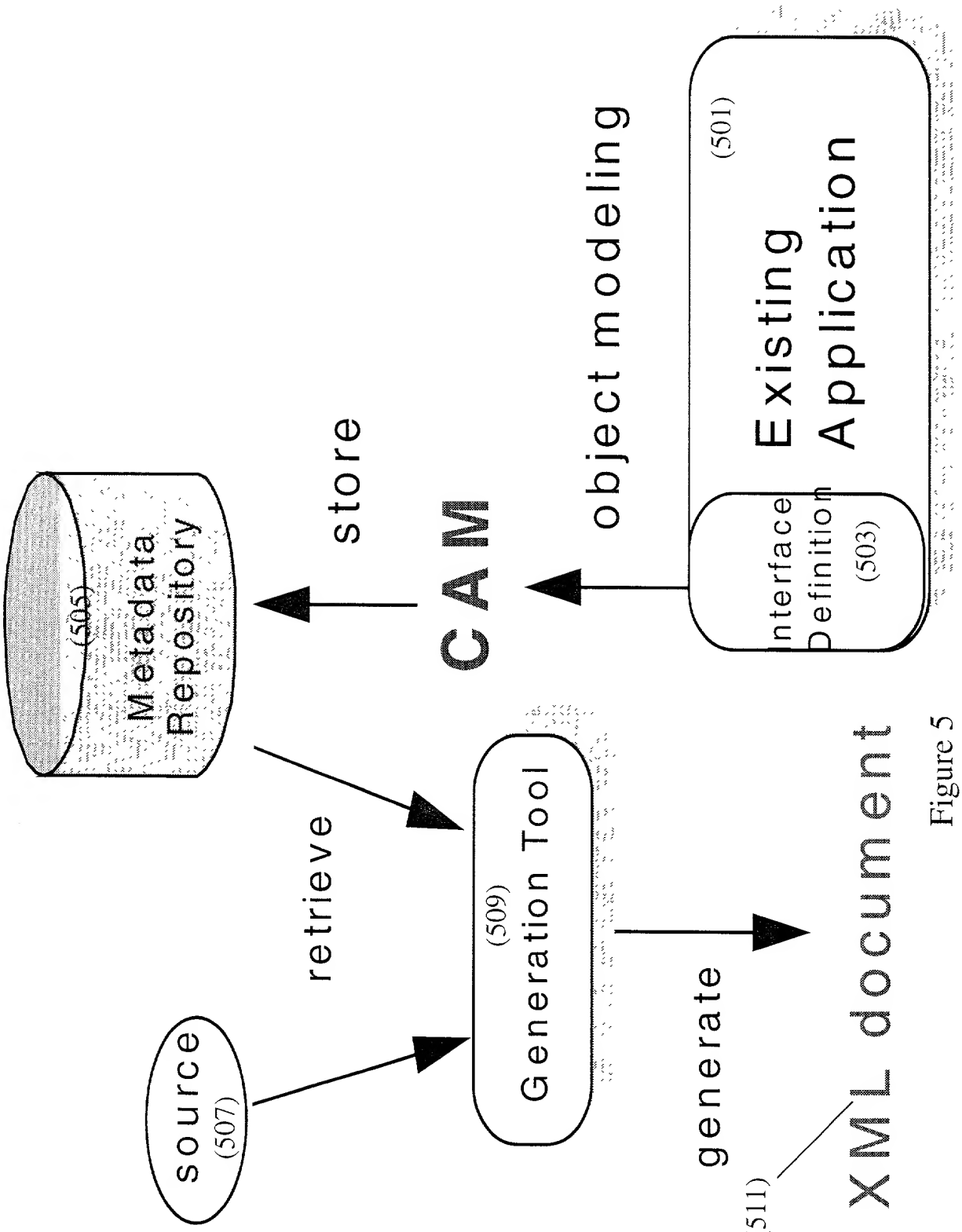
Existing Application
(501)
Interface Definition
(503)
object modeling
CAM
store
Metadata Repository
(505)
retrieve
source
(507)
Generation Tool
(509)
generate
(511)
XML document

Figure 5

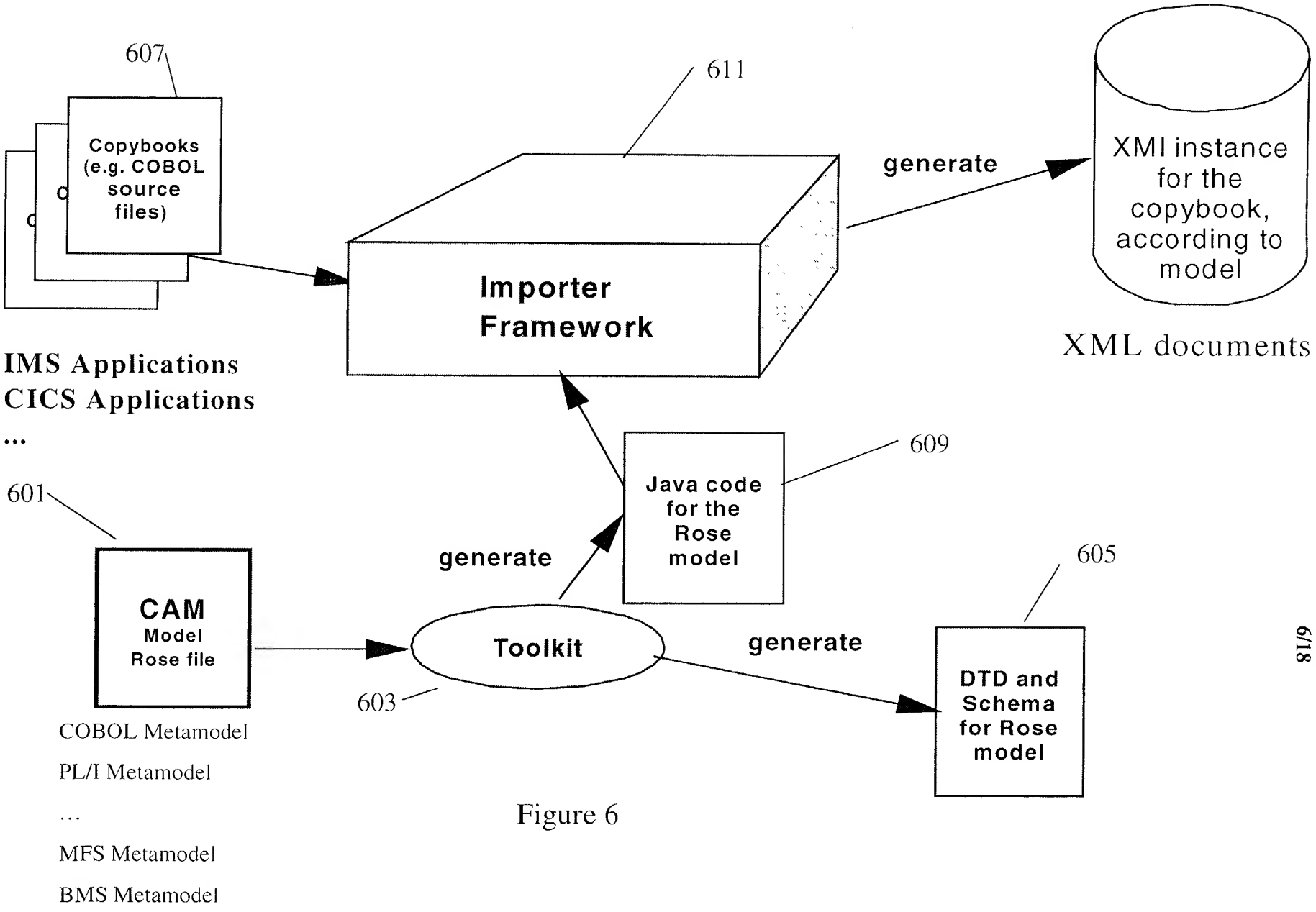
607
Copybooks (e.g. COBOL source files)
611
Importer Framework
generate
XMI instance for the copybook, according to model
XML documents
IMS Applications
CICS Applications
...
601
CAM
Model
Rose file
generate
Java code for the Rose model
609
605
Toolkit
603
generate
DTD and Schema for Rose model
COBOL Metamodel
PL/I Metamodel
...
MFS Metamodel
BMS Metamodel

Figure 6

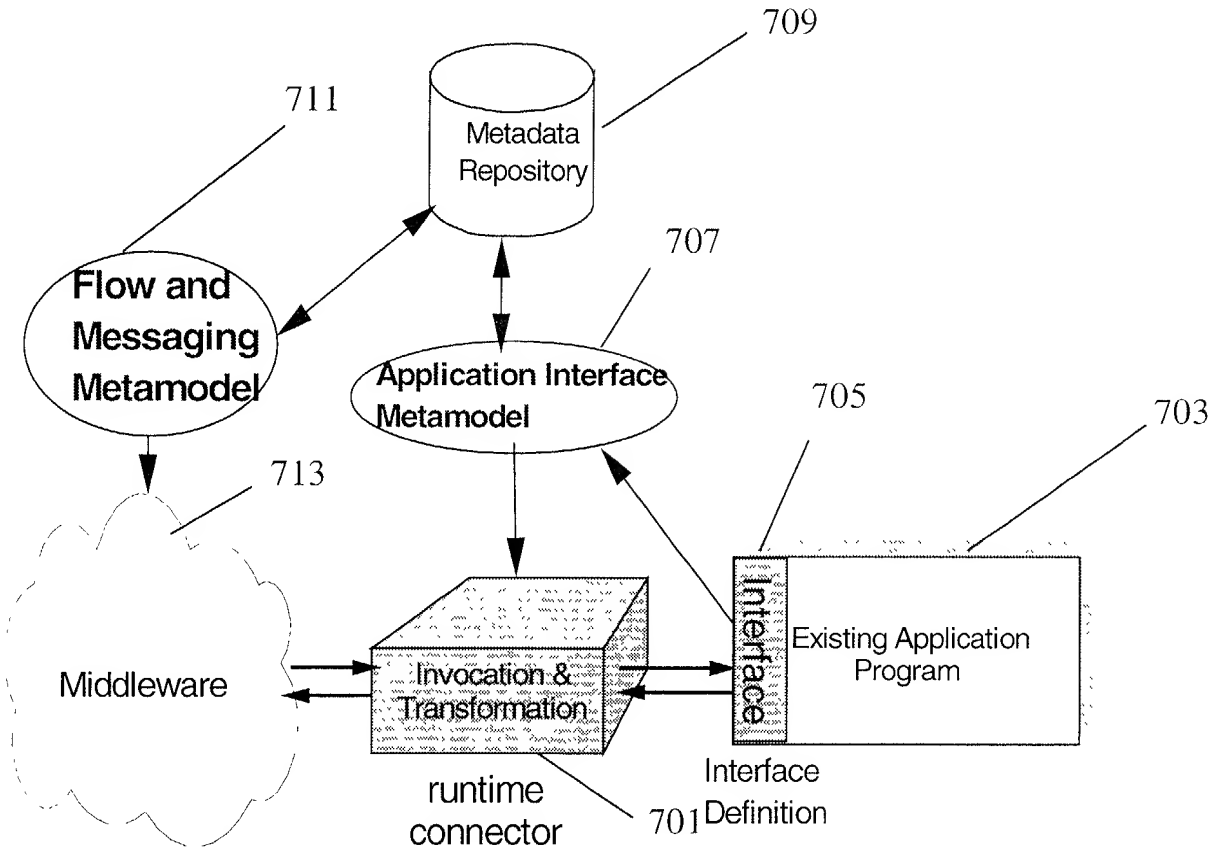
709
711
Metadata Repository
707
Flow and Messaging Metamodel
Application Interface Metamodel
705
703
713
Middleware
Invocation & Transformation
Interface
Existing Application Program
runtime connector
701
Interface Definition

Figure 7

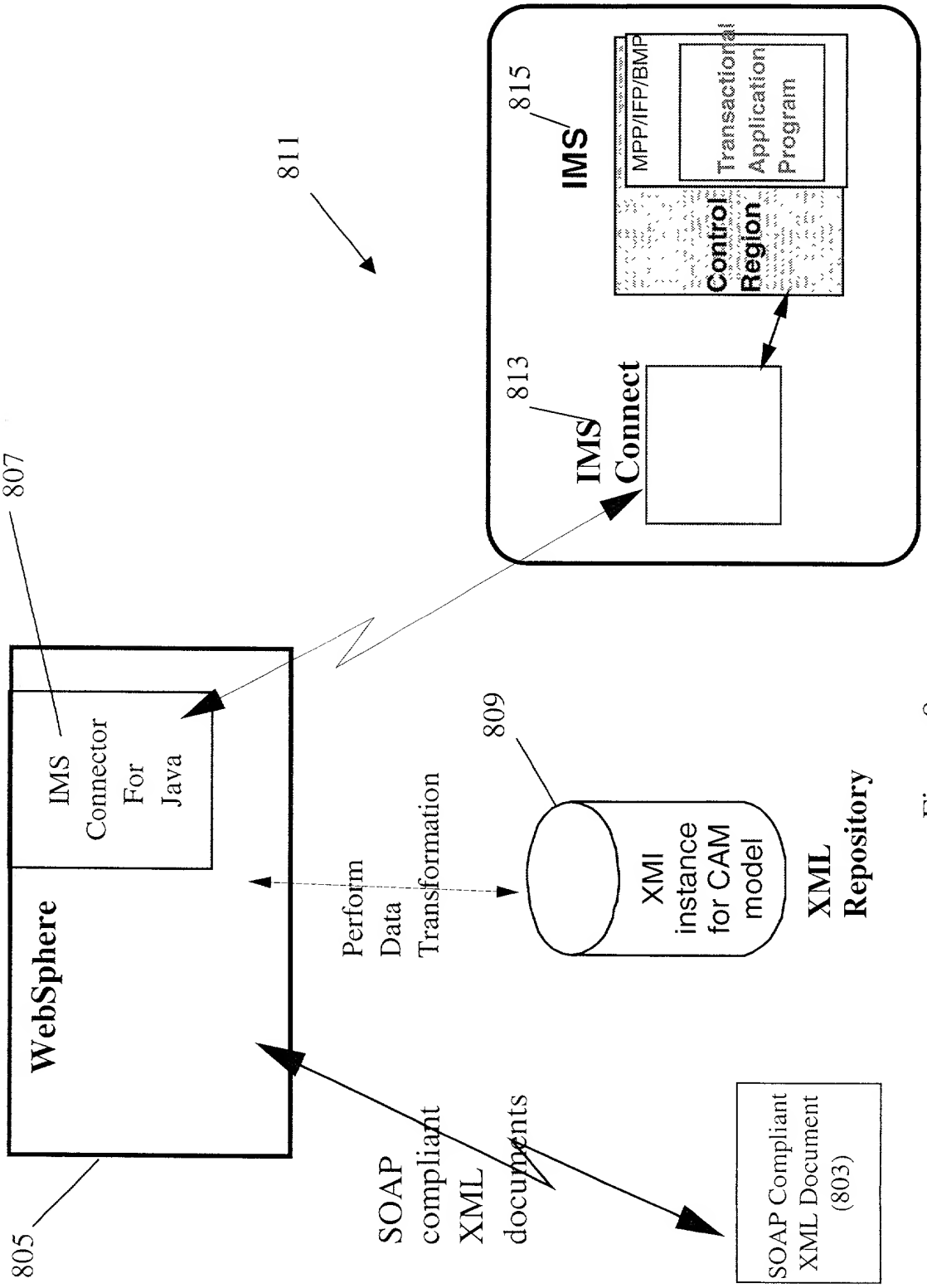
805
WebSphere
807
IMS Connector For Java
SOAP compliant XML documents
SOAP Compliant XML Document (803)
Perform Data Transformation
809
XMI instance for CAM model
XML Repository
811
813
IMS Connect
815
IMS
Control Region
MPP/IFP/BMP
Transactional Application Program

Figure 8

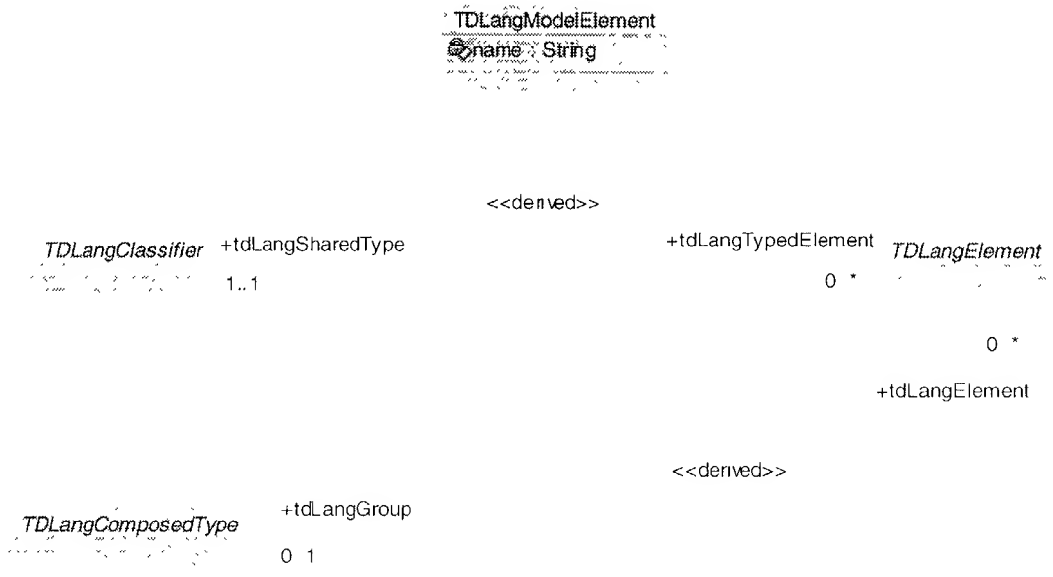
TDLangModelElement
name : String
<<derived>>
TDLangClassifier
+tdLangSharedType
1..1
+tdLangTypedElement
0 *
TDLangElement
0 *
+tdLangElement
<<derived>>
TDLangComposedType
+tdLangGroup
0 1

Figure 9

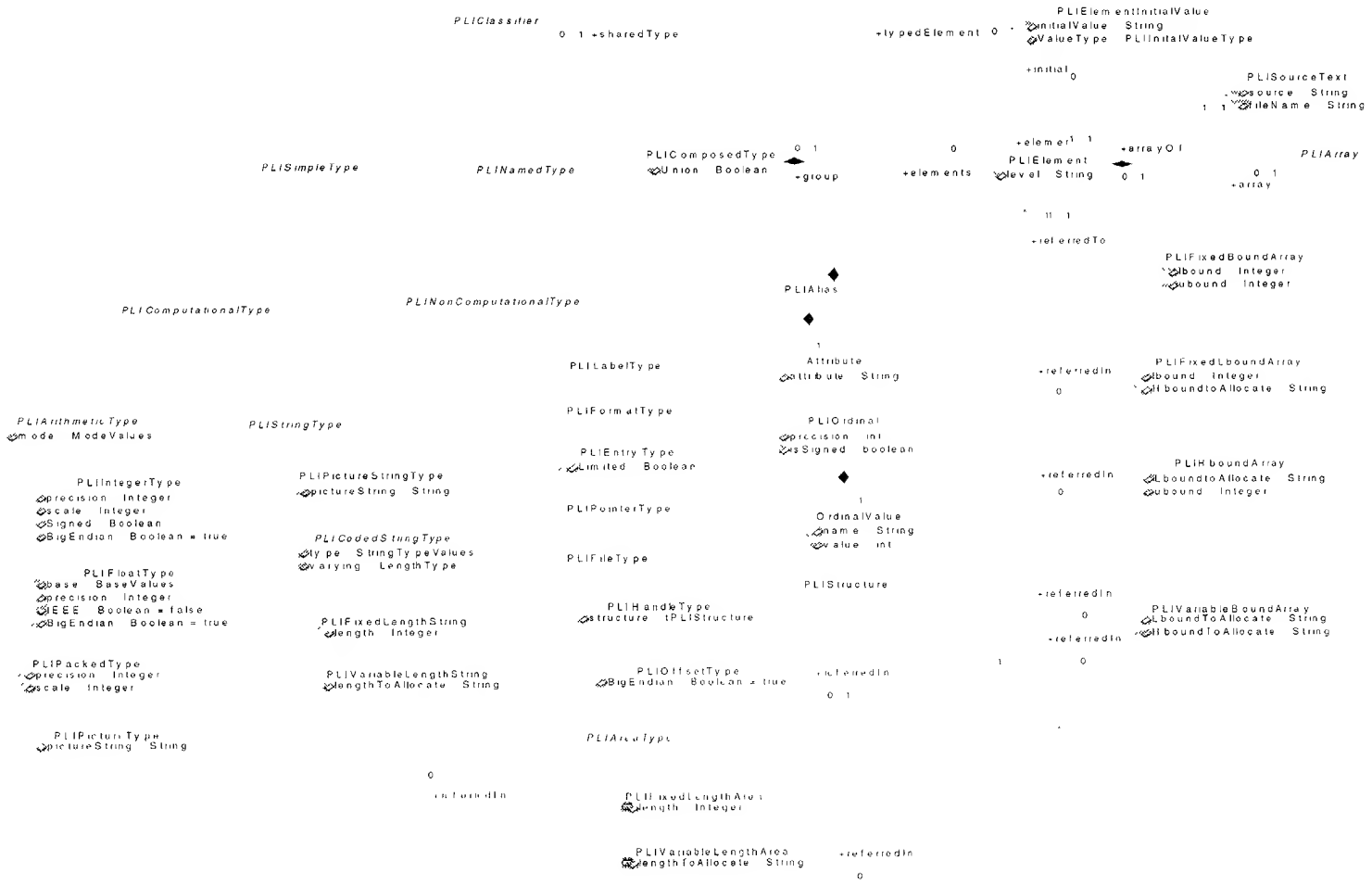
PLIClassifier
0 1 +sharedType
+typedElement 0 *
PLIElementInitialValue
initialValue String
ValueType PLIInitalValueType
+initial 0
PLISourceText
source String
fileName String
PLISimpleType
PLINamedType
PLIComposedType
Union Boolean
+group
0
+elements
PLIElement
level String
+elements 1 1
+arrayOf
0 1
PLIArray
+array
+referredTo
PLIFixedBoundArray
lbound Integer
ubound Integer
PLIComputationalType
PLINonComputationalType
PLIAlias
PLILabelType
Attribute
attribute String
+referredIn
0
PLIFixedLboundArray
lbound Integer
lboundtoAllocate String
PLIArithmeticType
mode ModeValues
PLIStringType
PLIFormatType
PLIOrdinal
precision int
isSigned boolean
PLIEntryType
Limited Boolean
PLIHboundArray
LboundtoAllocate String
ubound Integer
PLIIntegerType
precision Integer
scale Integer
Signed Boolean
BigEndian Boolean = true
PLIPictureStringType
pictureString String
PLIPointerType
OrdinalValue
name String
value int
PLICodedStringType
type StringTypeValues
varying LengthType
PLIFloatType
base BaseValues
precision Integer
IEEE Boolean = false
BigEndian Boolean = true
PLIFileType
PLIStructure
PLIHandleType
structure tPLIStructure
PLIFixedLengthString
length Integer
PLIVariableBoundArray
LboundToAllocate String
lboundToAllocate String
PLIPackedType
precision Integer
scale Integer
PLIOffsetType
BigEndian Boolean = true
PLIPictureType
pictureString String
PLIAreaType
PLIFixedLengthArea
length Integer
PLIVariableLengthArea
lengthToAllocate String

Figure 10

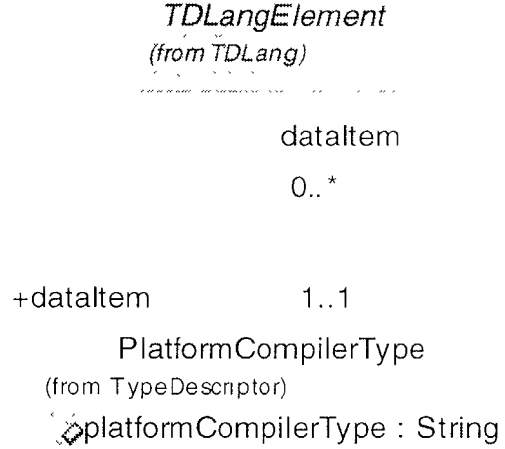
TDLangElement
(from TDLang)
dataItem
0..*
+dataItem
1..1
PlatformCompilerType
(from TypeDescriptor)
platformCompilerType : String

Figure 11

<<enumeration>>
signCoding
twosComplement
onesComplement
signMagnitude
zoneSigns
packedSigns
unsignedBinary
unsignedDecimal
<<enumeration>>
lengthEncoding
fixedLength
lengthPrefixed
nullTerminated
<<enumeration>>
floatType
Unspecified
IEEEextendedIntel
IEEEextendedAIX
IEEEextended0S390
IEEEextendedAS400
IEEEnonextended
IBM390Hex
IBM400Hex
<<enumeration>>
accessor
ReadOnly
WriteOnly
ReadWrite
NoAccess
<<enumeration>>
packedDecimalSign
MVS
MVSCustom
NT OS2 AIX
<<enumeration>>
bitModePad
mode16
mode24
mode31
mode32
mode64
mode128
<<enumeration>>
addrUnit
bit
byte
word
doubleWord

Figure 12

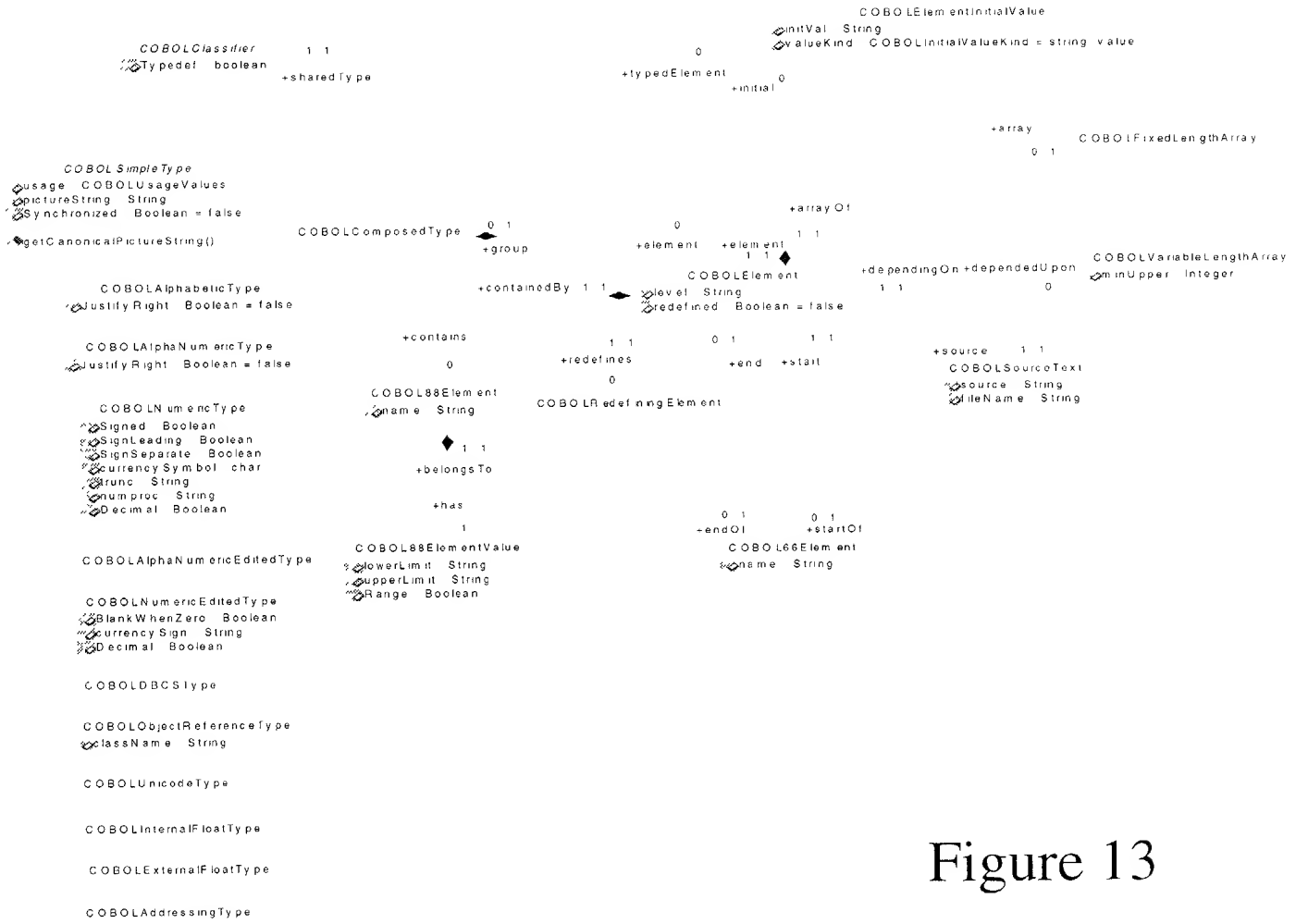
COBOLClassifier
Typedef boolean
+sharedType
1 1
COBOLElementInitialValue
initVal String
valueKind COBOLInitialValueKind = string value
+typedElement
+initial
0
COBOLSimpleType
usage COBOLUsageValues
pictureString String
Synchronized Boolean = false
getCanonicalPictureString()
COBOLComposedType
+group
+element
+element
+arrayOf
COBOLFixedLengthArray
+array
COBOLVariableLengthArray
minUpper Integer
+dependingOn
+dependedUpon
COBOLElement
level String
redefined Boolean = false
+containedBy
COBOLAlphabeticType
JustifyRight Boolean = false
COBOLAlphaNumericType
JustifyRight Boolean = false
+contains
+redefines
+end
+start
COBOLSourceText
source String
fileName String
+source
COBOLNumericType
Signed Boolean
SignLeading Boolean
SignSeparate Boolean
currencySymbol char
trunc String
numproc String
Decimal Boolean
COBOL88Element
name String
+belongsTo
+has
COBOLRedefiningElement
COBOLAlphaNumericEditedType
COBOLNumericEditedType
BlankWhenZero Boolean
currencySign String
Decimal Boolean
COBOL88ElementValue
lowerLimit String
upperLimit String
Range Boolean
+endOf
+startOf
COBOL66Element
name String
COBOLDBCSType
COBOLObjectReferenceType
className String
COBOLUnicodeType
COBOLInternalFloatType
COBOLExternalFloatType
COBOLAddressingType

Figure 13

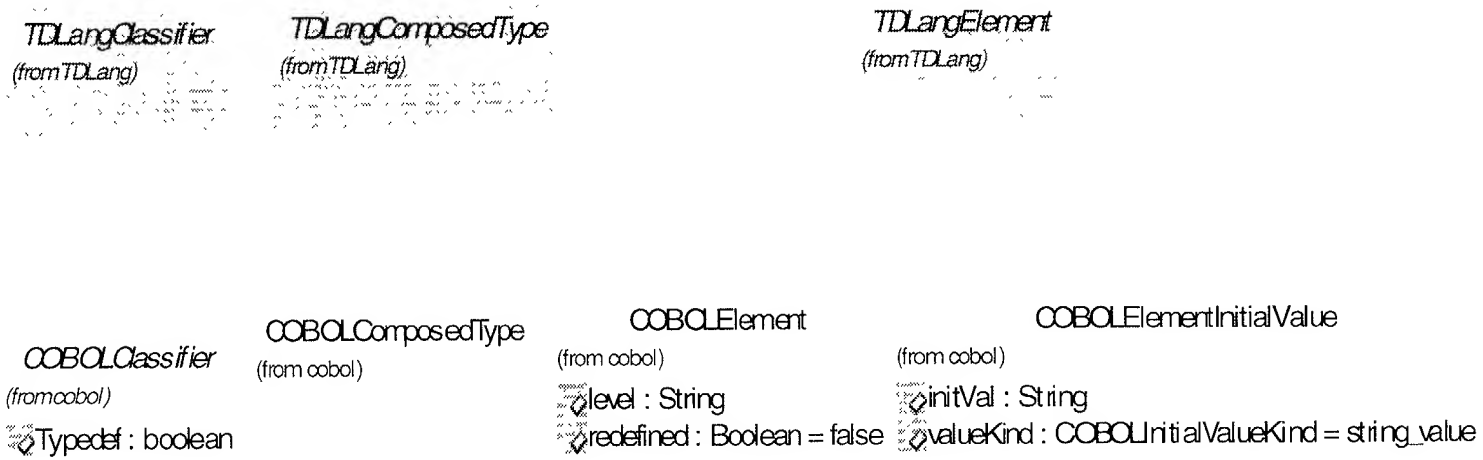
TDLangClassifier
(fromTDLang)
TDLangComposedType
(fromTDLang)
TDLangElement
(fromTDLang)
COBOLClassifier
(fromcobol)
Typedef : boolean
COBOLComposedType
(from cobol)
COBOLElement
(from cobol)
level : String
redefined : Boolean = false
COBOLElementInitialValue
(from cobol)
initVal : String
valueKind : COBOLInitialValueKind = string_value

Figure 14

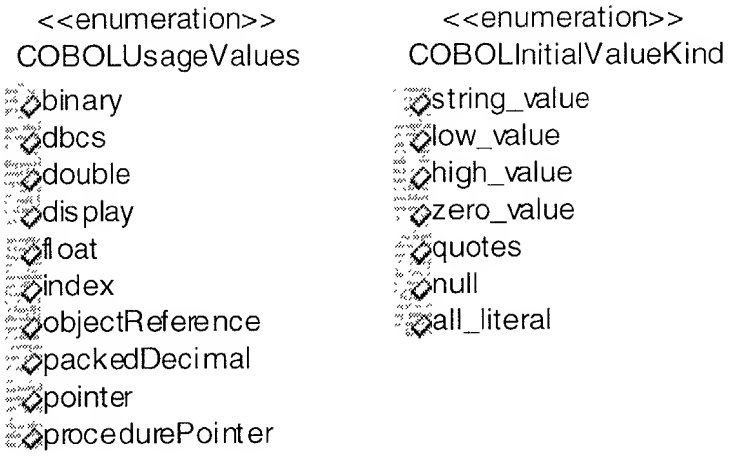
<<enumeration>>
COBOLUsageValues
binary
dbcs
double
display
float
index
objectReference
packedDecimal
pointer
procedurePointer
<<enumeration>>
COBOLInitialValueKind
string_value
low_value
high_value
zero_value
quotes
null
all_literal

Figure 15

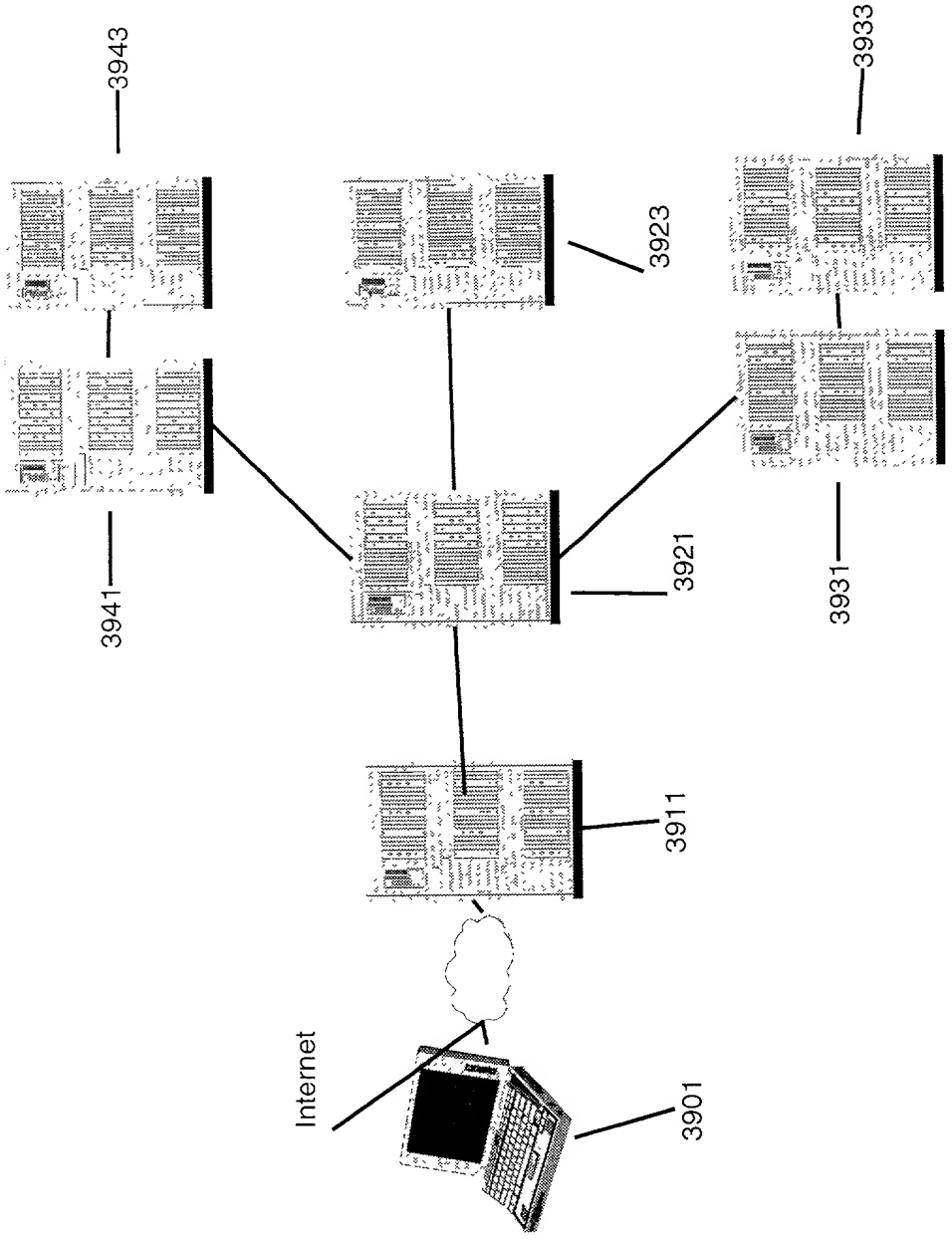

FIGURE 16

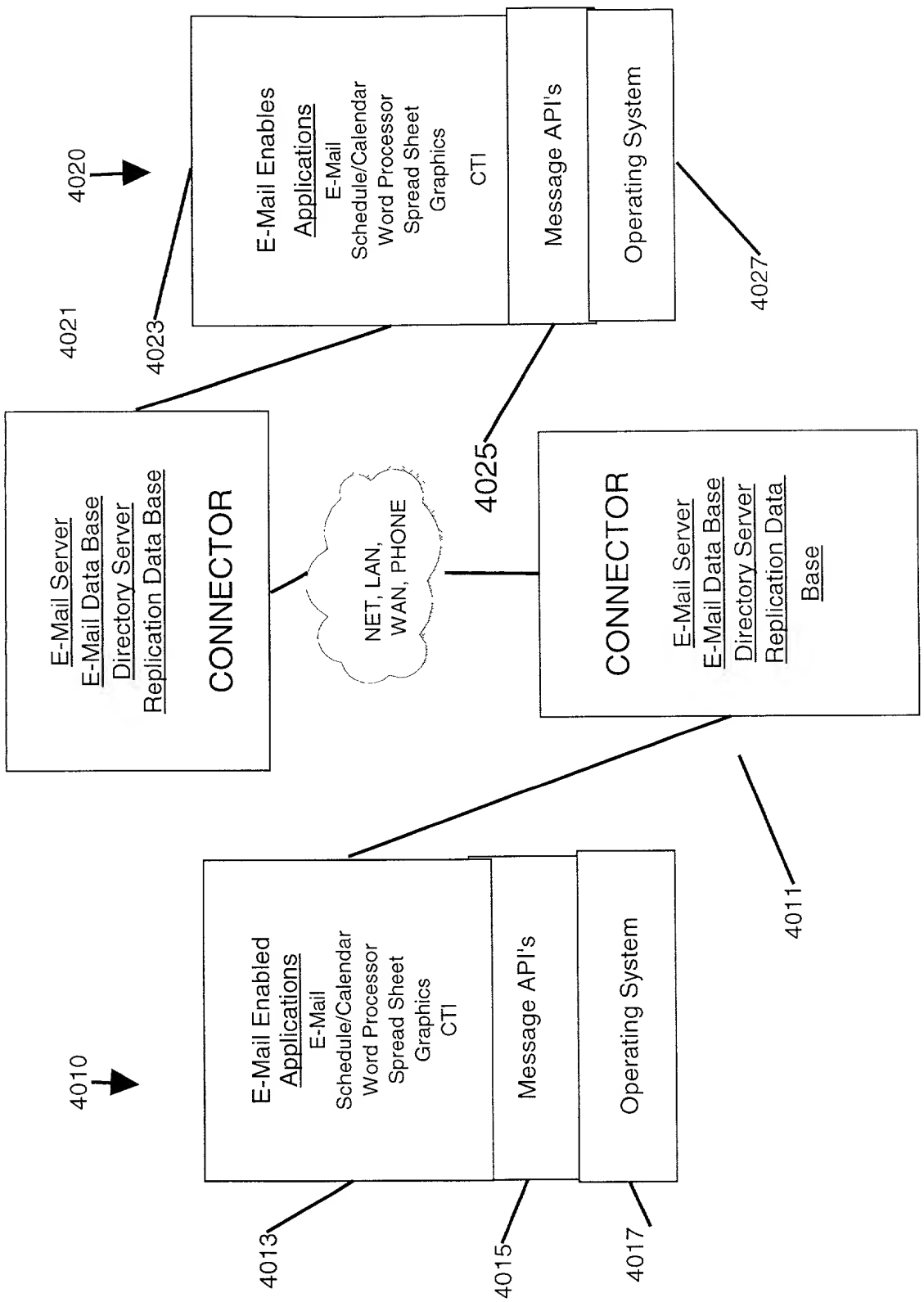
4020
4021
4023
E-Mail Enables Applications
E-Mail
Schedule/Calendar
Word Processor
Spread Sheet
Graphics
CTI
Message API's
Operating System
4027
E-Mail Server
E-Mail Data Base
Directory Server
Replication Data Base
CONNECTOR
NET, LAN, WAN, PHONE
4025
CONNECTOR
E-Mail Server
E-Mail Data Base
Directory Server
Replication Data Base
4010
E-Mail Enabled Applications
E-Mail
Schedule/Calendar
Word Processor
Spread Sheet
Graphics
CTI
Message API's
Operating System
4011
4013
4015
4017

FIGURE 17

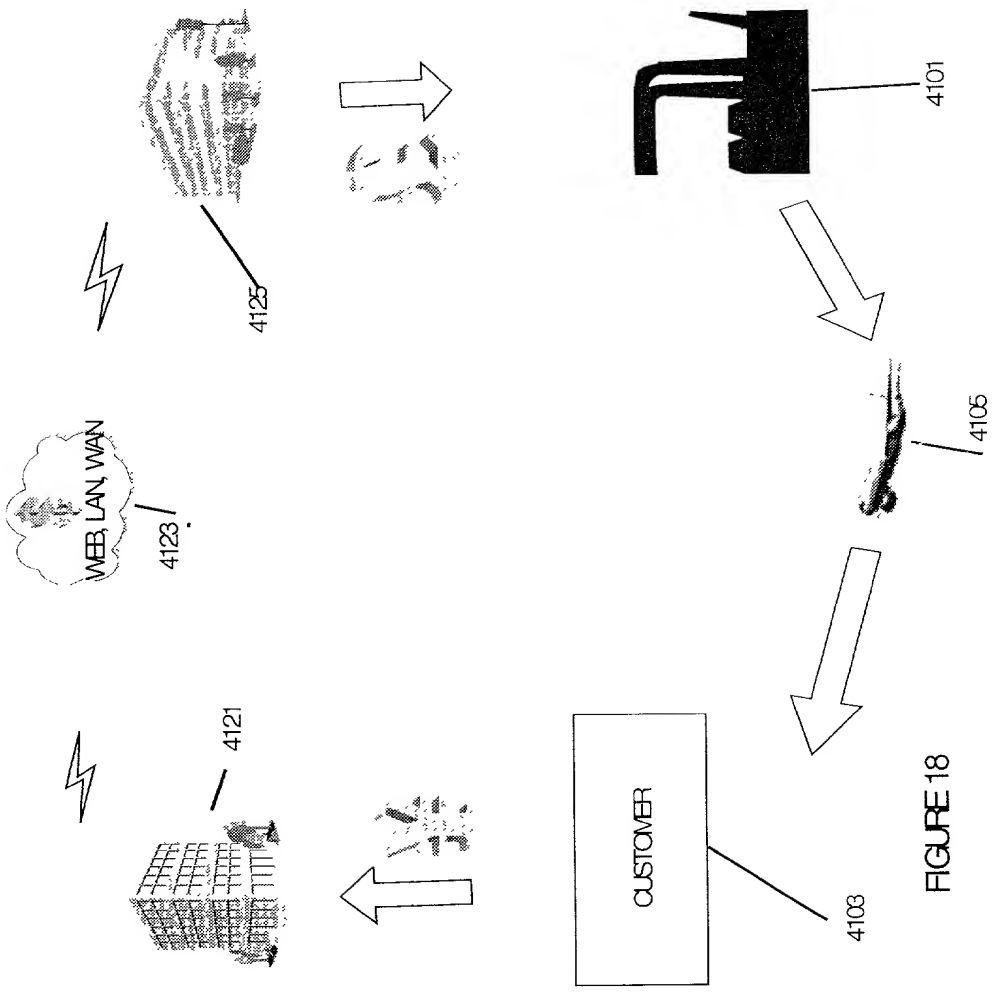

FIGURE 18